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Stress, Wellness, and Mattering among Cadets at West Point: Factors Affecting a Fit and Healthy Force

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This study was designed to provide information to assist in planning health promotion and wellness programs for military trainees. During their first semester at West Point, 179 cadets completed measures of holistic wellness, perceived stress, and mattering. The highest wellness scores were in areas of social support, physical wellness, and humor. Significant negative correlations were found between perceived stress and work, realistic beliefs, and stress management. Significant positive correlations resulted between 17 wellness scales and mattering. *t* tests revealed only one area, work wellness, where the norm group scores exceeded those of the cadets. Cadets' scores exceeded norm group scores for perceived wellness, mattering, and seven of the Wellness Evaluation of Lifestyle scales, including total self-direction. Within-group differences were identified based on gender, for four of the self-direction factors, and for age on the dimension of self-care. Implications for health promotion and wellness from the perspective of holistic wellness are considered.

Introduction

Whether in times of war or peace, military training and, indeed, military life is uniquely stressful for soldiers[1,2] as well as for military families[3] whose support serves as a buffer against a variety of sources of stress.[4] Existing studies of military stress have focused on identifying two sets of factors: those that predispose individuals to negative stress responses and outcomes[5] and those that mitigate the deleterious effects of stress.[6,7] A number of studies have examined psychological correlates of ineffective stress responses, focusing on factors such as anxiety sensitivity and reassurance seeking.[8] Far less has been written about positive characteristics (e.g., hardiness[9]) that function to mitigate or even prevent the negative consequences of stress.

A number of negative consequences of stress has been identified through empirical studies of military trainees. For example, stress has been shown to have a negative effect on cadets' physical health and susceptibility to illness,[10,11] predisposition to injury,[5] decision making and leadership effectiveness,[12] task performance,[9,13] and intellectual abilities.[14] The results of several studies have indicated that it is actually perceived stress rather than objective stress that is most closely associated with performance impairment.[9,11,15]

Efforts to mitigate the negative consequences of stress for military trainees have included such diverse approaches as relaxation training,[16] stress inoculation training,[17] and projects such as the U.S. Navy's Tactical Decision Making Under Stress project in which cognitive analysis of tactical decision processes is applied to enhance decision making.[6,7] Gold and Friedman[2] used ethnographic methods to study stress and coping among West Point cadets, and they found that major stressors included the novelty of the military experience, lack of control, and time management. Effective coping mechanisms included social support, humor, rationalization, and physical activity. In a related manner, in a longitudinal study, Atwater et al.[12] determined that cognitive ability, physical fitness, and self-esteem predicted leadership effectiveness. Multiple studies underscore the stress buffering effect of social support, sometimes operationalized as "mattering," or defined in terms of connectedness, belonging, feeling that one is important to others, or self-perceived support.[4,18,19]

The studies cited here underscore the importance of studying stress responses in military trainees, and, at the same time, reflect a need for conceptual and evidence-based models to organize the diverse array of influential factors and assist in the prediction and management of stress responses. This need is supported by the U.S. Army Department of Health Promotion and Wellness, whose mission is "to deliver a healthy and fit force by developing and disseminating health promotion products and services that integrate health promotion into the Army" (http://chppm-www.apgea.army.mil/dhpw/). In support of this mission, recent large-scale studies of soldier and family wellness at the U.S. Army War College have resulted in the development of a "new, integrative health promotion and wellness model."[20,21] Research and policy support the new model, in which the critical role of healthy lifestyles is emphasized as essential in mitigating stress. The core components of the model include physical (i.e., body composition, treadmill exercise tests, and blood profile analysis) and mental health measures (i.e., anger-hostility, depression, and anxiety), as well as spiritual assessment,[21] as essential elements of health promotion over the life span.

In reviewing the developmental model of Parker et al.,[20,21] we noticed a number of components identified in holistic wellness models that are not incorporated in this new paradigm. For example, Hettler's[22] well-known hexagon model of wellness includes not only physical and spiritual, but also occupational, social, emotional, and intellectual factors. Ardell's[23] five dimensions of wellness include nutritional awareness, physical fitness, self-responsibility environmental sensitivity, and stress management. The Wheel of Wellness,[24] based in counseling theory, includes all of these components in an 18-factor model; empirical data support each of the 17 factors as correlates of longevity and quality of life. Whether these 17 factors are correlated in some way with perceived stress and social support, operationalized in terms of mattering, remains unknown.

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The present study was undertaken to examine the 17-factor wellness model, described in more detail below, in relation to perceived stress and mattering in cadets, with the goal of providing additional information on which to plan health promotion and wellness programs for military trainees. Specifically, the following research questions were addressed: What are the levels of wellness of first-year West Point cadets? What is the relationship between perceived stress and wellness for these cadets? What is the relationship between mattering and wellness, and between mattering and perceived stress, for these cadets? How does the wellness of cadets compare to wellness in other known and comparable groups (i.e., college undergraduates)? Are there any differences within the cadets based on age, gender, culture, or year tested (i.e., pre- and post-9/11)?

Methods

First-year cadets enrolled in introductory psychology courses at West Point participated voluntarily in this study. Questionnaires were administered outside of class hours in the Fall semester in two sequential years, 2000 and 2001.

Participants

The participants included 184 cadets, 78 in 2001 and 106 in 2002. Five were eliminated because of missing data, for a final response rate of 97%. The 179 participants included 150 men and 29 women ages 17 to 23 years, with a mean age of 19.4 years (SD, 6.4; mode, 19). Just over one-third (n = 66) were Caucasian, 52 were African American, 24 were Hispanic, 14 Asian American, and 16 reported "other" as their ethnic background.

Instrumentation

Participants completed demographic items and three instruments: The Wellness Evaluation of Lifestyle,[25] the Perceived Stress Scale,[26]and the General Mattering Scale.[27]

The Wellness Evaluation of Lifestyle (WEL) Inventory

Sweeney and Witmer,[28] Witmer and Sweeney,[29] and Myers et al.[24] developed the Wheel of Wellness model based on Adler's Individual Psychology, a theory that espouses a holistic view of human functioning. After an extensive review of theory and research across disciplines, they identified a number of characteristics that correlated positively with healthy living, quality of life, and longevity. These characteristics were organized using Adler's proposed three major life tasks: work, friendship, and love, and the two additional tasks of self and spirit, which Mosak and Dreikurs[30] described as integral to understanding human behavior. Self-direction includes 12 additional subtasks: sense of worth; sense of control; realistic beliefs; emotional responsiveness and management; intellectual stimulation, problem solving, and creativity; sense of humor; exercise; nutrition; self-care; gender identity; cultural identity; and stress management.

As shown in Figure 1, the model was hypothesized as circumplex, with spirituality as the core, most central, and the hierarchically most important component of wellness. The self-direction components function like the spokes in a wheel to maintain the integrity of the well self. Surrounding the individual in the Wheel are life forces that impact personal wellness: family, religion, education, business/industry, media, government, and community. Global forces also are depicted as forces affecting the individual. The results of recent studies provide support for the 17 individual factors and for the interaction among the factors; however, alternate factor structures and models are currently being examined to explain empirical relationships among the wellness components (F.M. Marcus, unpublished manuscript).

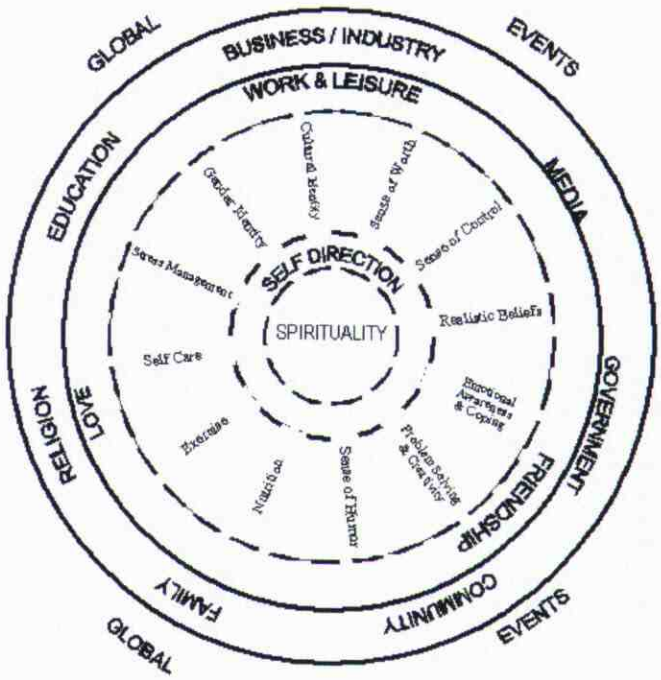

Fig. 1. The wheel of wellness. Copyright JM Witmer, TJ Sweeney, and JE Myers, 1998. Reprinted with permission.

The WEL[29] was developed to assess each of the components in the Wheel of Wellness model. The WEL is comprised of 103 statements (e.g., "I look forward to the work I do each day.") that are rated on a 5-point scale, from 1 meaning "strongly agree" to 5 meaning "strongly disagree." Scores for 17 discrete scales and two composite scales (total self-direction and total wellness, resulting in a total of 19 individual scores) are computed as simple sums of item responses that are converted through a linear transformation to place each on a common metric. Possible scores range from 20 to 100.

Test-retest reliability coefficients for all scales of the WEL for undergraduates over a 2-week interval exceeded 0.75; most exceeded 0.85. Alpha coefficients ranged from 0.66 to 0.89.[31] Seven studies conducted over several years to improve the psychometric properties of the WEL included factor analyses and structural analyses for approximately 6,000 respondents.[32] Results supported the 17 discrete factors and a single higher order wellness factor. In addition, the WEL discriminates among and within various subgroups on each of the scales and factors.

The undergraduate students included in the WEL norm group were used for comparisons in the present study. This group included 1,567 individuals, 57% of whom were women. More than three-fourths (67.3%) were traditional college age (i.e., age 21 or under) and 93% were under age 30. Approximately 61% were Caucasian, 15.5% were African American, and 19% re-

ported other ethnic backgrounds (i.e., Hispanic, Asian American, and Native American). Most (86%) were single.

Perceived Stress Scale (PSS)

The PSS[26] was designed to measure the degree to which situations in one's life are appraised as stressful. Cohen et al.[30] provided three versions of the PSS, including 14, 10, or 4 items, with comparable reliability for the various versions. The abbreviated 10-item inventory (PSS10) was used in this study.

The PSS10 items (e.g., "In the last month, how often did you feel unable to control important things?") are questions that are answered using a 5-point scale, from 1 meaning "never" to 5 meaning "very often." Scores range from 10 to 50. The PSS10 was normed on two samples of college students, totaling 446 individuals. Cohen et al.[30] reported alpha and 2-week test-retest coefficients of 0.85.

General Mattering Scale (GMS)

Rosenberg and McCullough[18] defined mattering as the degree to which individuals perceive themselves to be important to others. Their research indicated that an individual's sense of mattering is not tied to others displaying only a positive opinion of the individual, but to the belief that others care enough about the individual to have an opinion of him or her at all. Positive perceptions of mattering to others have been shown to be indicative of lessened physiological illness and distress.

The GMS[27] was developed to assess individuals' feelings that they mattered to other people. The instrument consists of five Likert-type items (e.g., "How much do you feel others would miss you if you went away?") rated on a 4-point scale, from 1 meaning "not at all" to 4 meaning "very much." Scores can range from 5 to 20. A higher score indicates a stronger sense of significance to others. Connolly and Myers[33] reported an alpha of 0.85 for a group of 82 adults, of whom 59% were women.

Data Analyses

Frequencies were computed for scores on all scales using standard statistical packages. Relationships between scores on the WEL, PSS, and GMS were examined using Pearson product moment correlations. A series of *t* tests were conducted to determine possible differences between available norm groups and the cadets on the 19 scales of the WEL. Effect sizes were computed for results that were statistically significant. Multivariate analyses of variance were computed to test for possible within-group differences.

Results

The first research question examined levels of wellness of first-year cadets. Mean scores for wellness, perceived stress, and mattering are shown in Table I, along with scores for comparable norm groups on the scales and subscales. Cadets scored highest on friendship, exercise, love, sense of worth, self-care, and sense of humor, and lowest on realistic beliefs, nutrition, and work. The greatest amount of variability was observed for spirituality, followed by nutrition, cultural identity,

TABLE I

MEANS, STANDARD DEVIATIONS, AND *T* TESTS FOR FIRST-YEAR CADETS AND NORM GROUP SAMPLES ON THE WELLNESS EVALUATION OF LIFESTYLE, PERCEIVED STRESS SCALE, AND GENERAL MATTERING SCALE

	West Point Cadets (n = 179)		Norm Groups						
WEL Scales	Mean	SD	Mean	SD	t	df	Significance		d
Life tasks									
Spirituality	74.68	19.56	77.83	16.74	−2.070	208	0.980		
Work	69.80	12.04	74.84	13.04	−5.259	228	0.000	**	−0.70
Leisure	77.99	13.38	78.67	13.23	−0.645	219	0.740		
Friendship	86.84	10.94	83.61	12.07	3.701	230	0.000	**	0.49
Love	84.29	14.04	84.60	12.82	−0.282	213	0.611		
Self-direction	76.54	6.70	75.07	8.44	2.701	247	0.004	**	0.34
Self-direction subtasks									
Sense of worth	83.94	10.67	81.55	13.29	2.762	245	0.003	**	0.35
Sense of control	79.08	9.68	80.47	11.61	−1.78	240	0.961		
Realistic beliefs	52.94	11.54	49.30	13.65	3.811	268	0.000	**	3.92
Emotional awareness	78.63	12.01	78.82	12.04	−0.200	220	0.579		
Intellectual stimulation	76.09	10.96	77.18	11.78	−1.251	227	0.894		
Humor	83.63	10.74	79.80	12.37	4.446	235	0.000	**	0.58
Nutrition	69.02	17.13	69.41	18.56	−0.286	228	0.612		
Exercise	85.60	11.95	77.73	15.17	8.097	248	0.000	**	1.03
Self-care	83.94	15.73	81.73	15.31	1.786	218	0.037	*	0.24
Gender identity	80.45	10.67	80.93	12.66	−0.559	239	0.711		
Cultural identity	73.90	15.81	76.88	14.84	−2.404	215	0.991		
Stress management	76.28	13.60	74.70	15.45	1.451	233	0.074		
Total wellness	76.92	6.88	76.40	8.32	0.936	241	0.175		
Perceived stress	32.61	3.61	23.67	7.79	26.769	404	0.000	**	2.66
Total mattering	16.63	2.79	12.9	2.5	17.119	21	0.000	**	7.47

*$p < 0.05$; **$p < 0.01$.

and self-care. The lowest variability was observed for the two composite scores, total self-direction and total wellness, followed by sense of control.

The second research question examined the relationship between perceived stress and wellness, and the third question examined the relationship between mattering and wellness and between mattering and perceived stress. Pearson product moment correlations between all of the scales are shown in Table II. Significant negative correlations were observed between perceived stress and work ($r = -0.187$, $p = 0.012$), realistic beliefs ($r = -0.321$, $p < 0.001$), and stress management ($r = -0.229$, $p = 0.002$). The corresponding R^2 statistics were 0.03, 0.10, and 0.05, respectively.

Seventeen of 19 correlations between the WEL scales and mattering were statistically significant, 12 at the 0.01 level and 2 at the 0.05 level. The highest correlations resulted between mattering and total self-direction ($r = 0.515$, $p < 0.001$) and total wellness ($r = 0.560$, $p < 0.001$). The highest correlations for discrete scales resulted between mattering and love ($r = 0.503$, $p < 0.001$), friendship ($r = 0.476$, $p < 0.001$), stress management ($r = 0.442$, $p < 0.001$), sense of worth ($r = 0.437$, $p < 0.001$), and sense of control ($r = 0.423$, $p < 0.001$). The corresponding R^2 ranged from 31% (total wellness) to 18% (sense of control). Correlations between realistic beliefs and leisure and between mattering and perceived stress were not significant.

The disattenuated correlations between total wellness and the perceived stress and mattering scores are also shown in Table II. The magnitude of these correlations indicates that any measurement error is randomly distributed. Furthermore, because the magnitude of the disattenuated correlations is equal to or greater than the observed correlations, the three measurements may be considered to be assessing statistically distinct concepts.

Table I shows the results of the fourth research question, which was designed to compare the cadets to other known groups who were comparable in some way to the present sample. Undergraduates in the WEL norm group scored higher on work wellness than did the cadets ($t = -5.259$, $p < 0.001$). Cadets scored higher on multiple indices of wellness: friendship, sense of worth, realistic beliefs, sense of humor, exercise, self-care, and total self-direction. They also scored higher than the respective norm groups on perceived stress and total mattering. Scores on stress management were not different between the groups examined. The effect sizes of the differences were also computed. Cohen's d is interpreted in terms of small (<0.20), medium (0.50), and large (0.80) effects. Using this index, three of the differences that emerged had small effects, three had medium effects, and five had large effects. The largest effect sizes were observed for mattering and perceived stress, followed by realistic beliefs and exercise.

TABLE II

PEARSON PRODUCT MOMENT AND DISATTENUATED CORRELATIONS BETWEEN WELLNESS FACTORS, PERCEIVED STRESS, AND MATTERING FOR FIRST-YEAR CADETS

	Perceived Stress			Mattering		
WEL Scales	Correlation	Significance		Correlation	Significance	
Life tasks						
Spirituality	−0.034	0.650		0.339	0.000	**
Work	−0.187	0.012	*	0.351	0.000	**
Leisure	−0.132	0.077		0.138	0.067	
Friendship	−0.066	0.381		0.476	0.000	**
Love	0.117	0.119		0.503	0.000	**
Self-direction	−0.090	0.233		0.515	0.000	**
Self-direction subtasks						
Sense of worth	−0.026	0.734		0.437	0.000	**
Sense of control	−0.068	0.366		0.423	0.000	**
Realistic beliefs	−0.321	0.000	**	0.050	0.510	
Emotional awareness	0.142	0.058		0.405	0.000	**
Intellectual stimulation	0.047	0.530		0.207	0.005	*
Humor	0.027	0.724		0.293	0.000	**
Nutrition	−0.152	0.042		0.314	0.000	**
Exercise	−0.052	0.488		0.254	0.001	*
Self-care	0.043	0.569		0.230	0.002	*
Gender identity	−0.010	0.894		0.234	0.002	*
Cultural identity	0.076	0.312		0.176	0.019	*
Stress management	−0.229	0.002	*	0.442	0.000	**
Total wellness	−0.095	0.206		0.560	0.000	**
Perceived stress	–	–		–	–	
Total mattering	0.063	0.406		–	–	
Correlations and disattenuated correlations	Wellness	PSS	Mattering			
Wellness	–	−0.105	0.617			
Perceived stress	−0.095	–	0.074			
Mattering	0.560	0.063	–			

*$p < 0.05$; **$p < 0.01$.

A final research question examined within-group differences according to gender, culture, age, and year tested. Gender differences noted on four scales of the WEL are shown in Table III. Male cadets scored higher on sense of worth, nutrition, and stress management, and females as well as those 18 and under scored higher on self-care. There were no differences based on culture (Caucasian versus ethnic minority) or year tested (pre- and post-9/11).

Discussion

During their first semester at West Point, 179 cadets completed measures of holistic wellness, perceived stress, and mattering. The highest wellness scores were in areas of social support (friendship and love), physical wellness (exercise, nutrition, and self-care), and sense of humor. Significant negative correlations were found between perceived stress and wellness in the areas of work, realistic beliefs, and stress management. There were significant positive correlations between 17 of the WEL scales mattering, with correlations for friendship and love exceeding 0.50. A series of *t* tests to examine differences between the cadets and known norm group samples resulted in only one area, work, where the norm group scores exceeded those of the cadets. Cadets' scores exceeded norm group scores for perceived stress, mattering, and seven of the WEL scales, including total self-direction. Within-group differences were identified based on gender, for four of the self-direction factors, and for age on the dimension of self-care.

The high wellness scores of the cadets on measures of social support, physical fitness, and sense of humor were not surprising in light of previous research findings reported earlier as well as the emphasis on physical fitness in the military itself. However, the relative importance of these scores changes when they are considered in relation to the scores of other comparable groups. For example, although friendship scores were significantly higher than those of the norm group, scores on love were not. This seems to reflect a more positive sense of camaraderie with peers in the military environment, but not more healthy or well intimate and family relationships than are found in civilian life. The good news here, of course, is that self-reported love wellness within the military environment was comparable with that of the norm group rather than lower.

Sense of worth, sense of humor, and exercise scores were significantly higher than in a group of civilian undergraduates, supporting previous research establishing these characteristics as important for success in military training as well as leadership. Self-care also was higher for the cadets. The self-care items in the WEL include attention to not smoking, not using alcohol, wearing seat belts regularly, and receiving preventive medical and dental care. It is encouraging to know that the cadets reported high wellness in terms of these items.

The finding of lower work wellness among the cadets than among a sample of civilian undergraduates merits further exploration, particularly because the effect size of the difference was large. The WEL work scale measures concepts such as satisfaction with one's work, perceptions that one's efforts are appreciated by others, and the feeling that one receives adequate compensation for one's work. It is possible that the current finding resulted from the need for adherence to a set core curriculum during the initial year of training, with subsequent feelings of lack of control or choice in regard to coursework. Further study is needed to determine the meaning of the current finding, and to explore the components of satisfaction with work, or school work, among the population of cadets.

The three areas of greatest difference, as measured by the strength of the effects, resulted in higher scores for the cadets on the WEL scale of realistic beliefs, the PSS, and the GMS. Realistic beliefs refer to accurate information processing and an absence of irrational beliefs. The current finding suggests that cadets struggle less than their civilian counterparts with such irrational thoughts as "I must be liked or loved by everyone I meet," and "I must be perfectly competent in all things to be considered worthwhile."

The large effect size for the PSS underscores the fact that cadets perceive their lives to be far more stressful than do civilian undergraduates. Although not surprising, this finding does emphasize the need for effective stress management practices for military trainees. Of concern here is the finding that stress management scores on the WEL were not significantly different between the two groups. Given the higher perceived stress, greater attention to stress management may be important.

The finding of greater perceptions of mattering among the cadets than among a group of adults not in school was of interest. The norm group for the GMS may not be directly comparable, hence this finding may merit further consideration with samples of individuals more closely matched to the cadets on important demographic indices. At the same time, high correlations between mattering and most of the WEL scales, combined

TABLE III

MULTIVARIATE ANALYSIS OF VARIANCE FOR SIGNIFICANT GENDER AND AGE COMPARISONS

	Gender			Age (years)		
WEL Scales	F (df = 1,176)	p	Significance	F (df = 1,162)	p	Significance
Self-direction subtasks						
Sense of worth[a]	6.73	0.010	*			
Nutrition[a]	16.97	0.000	**			
Self-care[b,c]	4.53	0.035	*	6.06	0.015	*
Stress management[a]	4.59	0.034	*			

[a] Men scored higher.

[b] Women scored higher.

[c] Cadets ages 18 and under scored higher.

*$p < 0.05$; **$p < 0.01$.

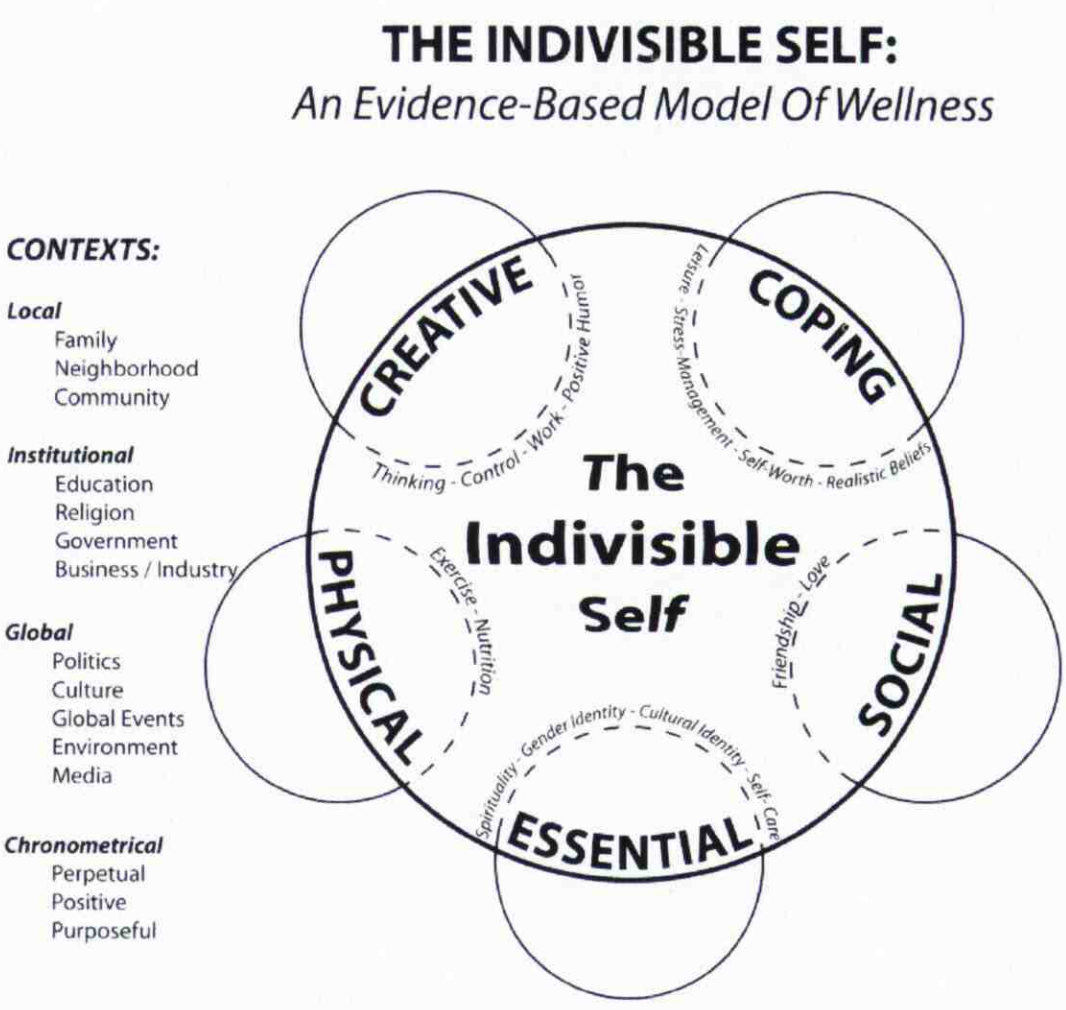

Fig. 2. The indivisible self: an evidence-based model of wellness. Copyright TJ Sweeney and JE Myers, 2003. Reprinted with permission.

with the known pervasive, positive effect of social support, may be interpreted as meaning that the cadets feel connected with others and experience a greater buffer against stress as a consequence.

Finally, the within-group differences among the cadets are worthy of further consideration. Women and cadets under 18 scored higher on self-care. In this sample, younger cadets with less life experience were more likely to engage in preventive health behaviors. Whether there is a developmental component involved in self-care, and whether the stresses of military life and/or training contribute to a decline in positive self-care, cannot be determined in the absence of longitudinal research. The results of previous research suggest that young men are more likely to engage in risk-taking behaviors and are less likely to seek medical screening or intervention. The current findings support the need for targeted attention to help these men develop and maintain positive self-care habits.

In particular, given the emphasis in the military on gender equality, gender differences in four of the self-direction subtasks may require closer attention. Lower scores for female cadets in sense of worth and stress management, for example, represent areas where targeted programs could make a difference. Because a sense of worth has been correlated with more effective leadership development and decision making, efforts to enhance self-worth among female cadets could contribute to better leadership outcomes. The area of nutrition stood out in the gender comparisons as the one where the most extreme difference occurred. In a society that values thinness, eating disorders among young women are common. The demands of military training may contribute to disordered eating patterns for female cadets; however, the reasons underlying the obtained scores merit further exploration. Although nutrition is an area where targeted programs could help to improve the fitness of future officers, accurate assessment of causal factors is essential before the development of interventions.

In interpreting the current data, possible limitations to generalizability are important. First-year cadets experience high personal expectations for success and high external expectations as well. Responding in a socially desirable manner to any of the instruments administered could result in artificially inflated scores, particularly on measures of wellness and mattering. Furthermore, although mean scores have been the focus of this discussion, the range of scores as shown in Table I also merits some consideration. Although there was some restriction of range for the PSS and many of the WEL scales, the full range of possible scores was observed for the GMS and the WEL scales of spirituality and nutrition, and within 10 points of the possible range for self-care, stress management, work, leisure, and love.

By focusing only on mean scores, the fact that many cadets experience extremely low wellness in these and other areas may be obscured. For virtually all of the areas of wellness, perceived stress, and mattering that were assessed in this study, many cadets scored in the low or "unwell" range; thus, attention to their needs and strategies for enhancing their wellness requires further attention.

A concern based on our research over the last dozen years is that some individuals and groups respond less than positively to a model that proposes spirituality as the core characteristic of healthy individuals. Fortunately, the cadets in this study had not been introduced to the Wheel of Wellness, thus possible confounds related to the model were avoided. The results of a recent meta-analysis of data collected by the senior author over the last decade, and analyzed subsequent to the collection of data for the current study, failed to provide support for the circumplex patterning hypothesized in the Wheel of Wellness model. However, exploratory and confirmatory factor analyses did support the 17 discrete scales of the WEL. A single higher order wellness factor and a series of five second-order factors were identified and a new model, appropriately termed "The Indivisible Self: An Evidence Based Model of Wellness," was developed.[31] This model, shown in Figure 2, offers an alternative perspective for examining wellness among military personnel, including trainees as well as the officer and enlisted corps.

Conclusion

Differences in components of wellness, perceived stress, and mattering between cadets and their civilian counterparts, and within the cadet population, emerged in this study. Some of these components (e.g., lower work wellness for cadets, and gender and age differences in wellness components) are amenable to change through targeted interventions and programs. Attention to holistic wellness factors for military trainees, through periodic assessment as well as intervention, could be an important means of addressing the health promotion and wellness goals of the military. Holistic wellness models, such as the Wheel of Wellness or the Indivisible Self Wellness model, and assessments based on those models, are an important means of providing strength-based interventions. Further study of specific wellness components (e.g., love) could be pursued using emerging models such as those being provided by the positive psychology movement, through which additional characteristics of optimistic persons are being identified.[34]

Additional research is needed to verify and extend the current findings relative to wellness of all military personnel. For example, larger samples are needed, including additional cadets from West Point and cadets attending other military training institutions, as a basis for study of military trainees. Studies that examine differences in wellness between and within the officer corps according to factors such as rank, location, and longevity are important. Similarly, studies of wellness among enlisted personnel could provide substantial information on which to base needed health promotion programs. Differences in wellness between officers and enlisted personnel, and between officers and enlisted personnel across the military services are also important. Likewise, wellness of military families is an important consideration, given the important support role of families for military personnel.

Longitudinal research would be useful for determining how holistic wellness factors change over time; this information could serve as a basis for development of programs to promote retention among officers and enlisted personnel. Ideally, assessment information can be used as a foundation for planning needed and effective wellness and health promotion programs, based in theoretical as well as evidence-based models of holistic well-being. Such assessments provide important baseline information for evaluating the success of intervention programs for promoting a fit and healthy force.

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